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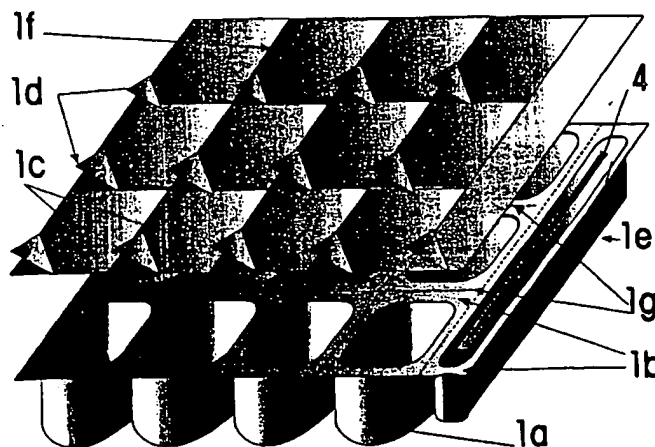
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(54) Title: BLISTERPACK FOR SINGLE USE, WITH APPLICATOR AND APPLICATION PRODUCT



(57) Abstract: The invention refers to a product of single-use, consisting of a packing "blister pack", comprising a fluid product (3) and a tool (2) the product is applied with, and it is destined of medical use, hygienic and maintenance. The invention realizes a single use "blister pack", containing the applicator (2), the product of application (3), and the tool of application (4). The product of application can be liquid or paste, and the tool of application is made of absorption materials. Characteristic for the present invention is the packing in same compartment (1) of the blister pack, both of the product of application (3) and the applicator. The present invention, proposes a single-use applicator with absorbing properties (2). Also, propose to include in the "blister pack" a handle (4), or a pincer to use the applicator (2) soaked in the product of application (3), in best conditions. The product according to the invention is used in medicine, hygiene, and maintenance.



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## BLISTERPACK FOR SINGLE USE, WITH APPLICATOR AND APPLICATION PRODUCT

**Background of invention:** The present invention relates to a kit containing an application product and an applicator, packed in a "blister pack". It is used in the production of equipment necessary in the application of a certain product, using an applicator.

**The level of the actual technique:** Many technical solutions known presently, in the field of application of the present invention, use equipment or products packed in blisters.

World patent 00/02513 / 30 01 00 proposes a blister containing pairs of two adjacent compartments. The common part of the edge is provided with a little piece which after breaking allows the communication between the two compartments. In one compartment can be introduced paste and in the other, many dry absorbing pieces. The solution proposed is very expensive meaning the construction for a piece of single-use and is suitable only for some combinations applicator – product.

World patent 9948456/30.09.1999 proposes a blister, which contains many absorbing plugs sunk, in a watery liquid used in human cosmetic in wrinkle treatment around the eyes. The disadvantage of this solution is, only the applications are of single using, the blister in which they are picked being tight closed, many times re-used and the product has a precise use the treatment of the eyes.

U.S. patent 5.609.246/11.03.1997 proposes a blister pack for contact lens. The product has many compartments in each of them there is one lens and a special liquid to preserve the qualities of these lens. The compartments have more complicate shapes to help the taking off the lens while using. The disadvantage of this solution (in case of using it in many fields) is that the lens is an applicant product but the blister does not contain a tool for application. The existent liquid in the compartment is a mean of keeping and not a product of application. The field of application of this solution is strictly orientated.

EP 0778018/11.06.1997 proposes a blister of single-use, including a liquid for oral hygiene. The invention replaces a spoon and a bottle with the respective product by pre-measuring of the content of blister and the use of this one as a spoon. The disadvantages of the solution proposed consists in the fact that it cannot be used in other fields for the application of a product, because the tool applicator is missing.

US 5, 911, 319/15. 06. 99. Proposes a blister back with many compartments containing tapes of elastic fabrics impregnated with a dry product for teeth brushing. These tapes, rolled onto the finger, are use as toothbrush.

The disadvantage of this product is that it has a limited field of use, due to the fact that it has no handle, no impregnated product in the applicator, for to be used without water. Further more the adherence at finger in case of filling the blister with a liquid of application disappears.

Besides these solutions, in medical practice are currently used sterile bandages impregnated with a disinfecting solution or other medicine. These products refer to the bandages that cover the wound, not to liquid products used for local cleaning and disinfecting.

In plants pathology field are known many methods to deposit pharmaceuticals products on ill plants but these one are based on spraying technique of the product not one local greasing.

In the field of local human or animal hygiene are used many tools as following: hair brushes for oral hygiene, brushes for local acting into the ear, under the nails, etc. In all these cases the product of application is packed separately and unfortunately, the applicator is not sterile and of single- use.

In the field of maintenance of personal or domestic use objects, the techniques of application of certain products are very varied. For instance tanks with product of application are endowed with a, either sponge or textile applicator. With this applicator, the tank containing is deposed on the certain surfaces or even a sponge impregnated with silicon oil to grease shoes or furniture is used. These systems are not in the category of single use and the application products must be not volatile, or pellicle forming in contact with the air.

**Short presentation:** The present invention relates the method of realizing a kit packed as "blister pack". Every compartment of this "blister pack" contains a product meant to the application and an applicator, both of single-use. The ensemble can also contain one or more handles, or pincers, attachable to the applicator to ease the action of application. Due to the applicator properties to include in his volume, the product applied, it is realized a pair applicator-product of application. By shape and composition, the applicator is mean to be of single-use.

The product applied is liquid or paste.

The pair applicator-product is pack, in the same compartment.

There are many fields of using, according to the invention, for each one a different set of combinations of the compartments being used. Generally, the product is use in medicine, hygiene, and maintenance.

Consequently, the product, according to the invention, is a "blister pack" of single-use for medical use, hygiene and personal or domestic maintenance.

**The problem solved** by this invention is the obtaining of a product with single-use components, with the help of which a liquid, a gel or a paste product to can be applied in a certain place.

The main advantage of this invention is the great number of fields in which the product, according to the invention, is used. The product, according to the invention, can be industrial obtained, having a great variety of shapes, using the same technology by changing the material or by changing the applicator dimensions, or the composition of the applicable product.

*Theoretical considerations concerning the practical utility of the invention.*

The invention does not propose only a new product, but firstly a new concept about the way of producing, packing, and trading the products of general use as well as the tools that these products use.

A standardization of the way of packing under the form of a "blister pack" is conforming to the international trend of increasing the population security. In this way the risks of diseases by using the tools and products that are not of single-use being eliminated.

**Detailed presentation:** The product according to the invention involves many different technical solutions for each field of use.

No matter the variant realized, the product according to the invention is packed as a "blister pack" (fig 1) with many compartments (1a).

In every compartment is introduced:

An applicator likes a solid corpus having absorption propriety (2)

A product of application (3) like: a liquid, a gel, or a past.

The applicator (2) is endowed with a couple-zone by means of which, a handle (4b), a pincers (4c), or a finger (2e), can be coupled, or introduced.

The product of application (3) is introduce, upon the applicator, in the moment of packing under a fluid shape, for to penetrate the porous applicator or to fix on this one. In a "blister pack" (fig.1) can be also included, besides the compartments (1a) containing applicator and product of application, one compartment (1e) of a special form for a handle or a pincer.

A "blister pack" (fig.1) obtained by including the applicator (2) and the product of application (3) between two layers (1b and 1d). One of this layers, have several deep spaces named cells or blisters (1a) in the size and the shape of the applicator, and can be obtained by injection or thermoforming. The other layer (1c) is a plane plastic foil, paper or metal which is stick on the first layer openings (1b), after the introduction of the components into the compartments.

After sticking, the said foil is sectioned between compartments (1f) and the layer with the cells is partially perforated or cut (1g). Consequently, every compartment (blister) (1a) can be easily detached from the rest of the compartments and the covering foil (1c) can be unglued from each compartment due to the unglued corner (1d).

The use of the product according to the invention will be as followed:

The covering foil (1c) from the compartment (1e) with the handle, or pincers (4) will be unglued. The covering foil (1c) will be unglued from one compartment (1a) that contains the applicator and the application product. The handle (4) will be coupled with the applicator (2), or the applicator is hitched

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with the pincers (4c). The cleansing, the rubbing, the wadding, or the greasing of the wanted surface can begin, due to the fact that, the applicator is already impregnated with the product of application. After finishing the applicator is detach from the handle (or pincers) and throw out. The empty cell is also detached from the blister and is also throw out.

**Examples 1:** The obtaining of a "blister pack" with sponge applicators.

It is cut or make up by touching with a hot surface, a piece of sponge, double disc ellipse shaped (fig. 5) sized as followed:

a=10 mm; b= 16 mm ; c=24 mm,

This piece of sponge sectioned according the smallest sized section, by means of a thread of nickel heated at the melting temperature of the material.

Make a depth perforation (5) in the piece acquired, using a hot peak of metal.

Make a little tail of plastic (by injection) with one end shaped like the negative of the perforation in applicator.

To realize a "blister pack" (fig 1) according to the invention use a little tail (4b) and 12 applicators according to the description above, which will be introduced into every one compartment (1a) of the "blister pack". Pour into each compartment 10ml of a product of application under a liquid form.

Stick on surface of the cell (1b) a tin-paper cover (1c).

A "blister pack" with 12 applications and products of application of single use with their little own tail is acquire.

**Way of use:** The tin-paper is unglued (1c) pulling the unglued corner (1d) from one of the cell (2). The handle of the brush (4b) taken out from its cell (1e) is inserted into the couple-zone of the applicator. Thus, the process of rubbing, wadding, or cleansing can begin, the sponge being already impregnate with the product of application. After finishing the operation, the applicator cell is detached from the blister along the perforated line (1g) and thrown out. The handle will be keep for another use. It is reintroduced in its place (1e) from "blister pack".

**Example of industrial method of making a product according to the invention**

**Necessary materials:**

A plate of sterile sponge having qualities required according to the aim with 10mm thickness

The application product (3) under a liquid form aim to fill the compartments.

Thermoforming PVC in the shape of a foil

Auto-adhesive sterile PVC sheet

Little plastic brush tails made separately by injection (fig 4)

**Description of the equipment**

The equipment comprises two operational lines including many successive processes, the two lines work synchronically on perpendicular directions.

The first line "down band " has the following zones of action:

- Thermoforming "blisters" (fig 1) of plates.
- Intersection of lines zone, where the down-band receives into the compartments the pieces of sponge formed (2)
- Doze zone (liquid on the sponge pieces (2)
- Introduction of the handles (4) in the special place into the cell (1e).
- Sticking closing foil (1c).
- Perforating (1g) and cutting of foil (1f) zone between the compartments
- Zone of packing in boxes.

The second line " up line" has a perpendicular moving direction on the first one having the following zones:

- Mechanic cutting zone of sponge plate in horizontal plan
- Thermal forming zone of sponge pieces (2)

The two lines work simultaneously and synchronically.

On the upper line, the plate of sponge is cut in batons. The sponge baton cut goes into the forming zone. The forming zone is composed of three moulds at the melting temperature of the sponge.

catching between them the baton of the sponge. At the retreat of these moulds, it results many applicators of sponge (2b) of shape given by the moulds and fall into the compartment (1a) from the down line. The cycle above repeats for another set of pieces of sponge and for another range of compartments, which, will be filled, with these pieces. At the exit of the forming zone the compartments (1a) are filled with the application product (3). After filling with liquid (3) the cell (1a), move with another range and go into the sticking foil zone (1c). After this, the blister with cells goes into closing and perforating zone, (1g) where cuts the foil until the sticking surface. (1f). The perforation (1g) is realized between all the cells so that each one can be detached one from another. On the side with the foil (1c) in the separation zone (1g) between the compartments, a punch of knives, cut (1f) the foil up to the sticking surface.

In packing zone, the cut blisters are packed in collecting-boxes.

Thus, we can obtain products "blister pack" according to the invention.

Depending to the product introduced upon the applicator, the blister is destined for many aims, for instance:

- Maintenance of the shoes if the product of application (3) is a shoes cream
- For cleansing of the spots on clothes, if the product of application (3) is a solution of spots cleaning.
- For cleansing of the leaves of ornamental plants if the product (3) is a diluted solution of alcohol in water.
- For teeth brushing if the product of application is a solution of teeth brushing.
- For post surgery disinfecting of wounds if the product is chlorine.
- For ears cleansing of domestic animals if the product is chamomile tea

### **Detailed description of four variants of obtaining products according to the invention for four different use fields: I, II, III, IV**

#### **I. Kit "blister pack" for single-use, with applicator and application product, for hygiene, medical use, or maintenance.**

##### **Variant for oral hygiene**

**Background of this variant of invention:** The product according to the invention replaces the teeth brush, the teeth paste, and their preservation support. It is presented as a "blister pack" for teeth brushing providing an applicator for teeth brushing of single-use, impregnated with the cleansing fluid product. Due to the shape of the product and its handle, the product can be used manually (2b) or by a teeth brushing rotating electric mechanism (2a).

##### **The level of the actual technique in this fields:**

US patent No. 5909739/08.06.99 proposes a single-use piece that can be use at teeth brushing as an elastic band fastened on the user finger. On the surface of elastic piece can exist little ribbons for the gums massage and together with the piece of single-use little capsules are attached in which the user finds the teeth paste. The solution proposed is complicated and expensive for a single-use product.

US patent No. 4251897/24.02.1981 proposes a teeth brush of hair with detachable head of single-use.

This solution cannot be applicable at "blister pack" system.

US patent No. 5774925/07071998 propose an applicator for oral hygiene providing a rigid handle and a sponge head fastened on an elastic muff for coupling with the tail. It is used by moisture in a vessel with the necessary liquid then the oral cavity is lubricated with it.

The solution does not propose a single use product.

EP patent No. 0872195/21.10.1998 proposes a teeth brush detachable whose head contains two ranges of sponge between which a dose of "dentifrice" is introduced. Although its construction is based on the use of a sponge for the retention of the cleansing product, the solution is not suitable for the packing in blister pack system.

US patent No. 4628564/16.12.1986 proposes a teeth brush with hair, which has under the hair layer, a sponge layer to increase the liquid quantity used at the teeth brushing.

This solution is also expensive to be used at producing teeth brushes extremities of single-use.

US patent No. 3939522/ 24.02.1976 proposes a teeth brush which has in the place of hair a head of sponge having towards the rigid support an inside concave plane space for increase the quantities of liquid of retention.

Although the solution could be used for the production of teeth brushes of single-use, the patent does not give solutions in this case.

US patent No. 5911319 /15.06.1999 proposes head of teeth brushes, of single-use, attachable on finger. Between the grooves, they are impregnated with pasty products for oral hygiene and they are introduced in a set of six cells "blister" with an opening foil. The solution presented is applicable at packing in "blister pack", but uses non-absorption applicators and more, reduce the field of use for the case when it used by finger.

US Patent No. 5909733 /08.06.1999 proposes pieces of single-use teeth brushing attachable on finger packed together with little packages of paste. The solution does not propose the packing together of the applicator and the product but separately, their construction, being much more complicated.

At the ordinary system of teeth brushing with brushes of hair, a series of disadvantages are notices, such as:

The brushes with hair produce the bleeding of gums.

The reuse of these brushes involves the risk of infection of the oral cavity due to the reintroduction of the source of microbes into the mouth grown on the brush.

The risk of spreading the diseases for example AIDS by the use of the same brush in a community, having traces of blood.

The brush with hair involves the obligatory use only of certain cleansing product as paste or gel but of liquid products. This fact limits the possibilities of their fabrication.

The toothpaste due to its consistency obliges to a rinsing tooth using much water. Some times, this water is not at hand, other times it is not potable.

Almost never it has the body temperature and causes tooth aches.

**The problem solved:** The present invention proposes a "blister pack" (fig 1) meant to teeth hygiene, which contains applicators of single-use (2a, 2b), a fluid teeth cleansing product (3) impregnated into the applicator, and a handle.

The handle has a suitable shape to manual use (4b) or can be coupled (2a) at a cleansing teeth electric apparatus.

The applicator is executed of polyurethane sponge and is a flat shaped (2b), if it is destined to manual cleansing teeth, with an appropriate (4b). It is a cylindrical symmetry shaped, if it is destined for to be use, with an electric cleansing teeth apparatus, with a handle (4a) witch has a head that can be coupled at the respective apparatus.

The cleansing product (3) can be liquid or gel, (in this last case, the product is poured over applicator before gelatin)

Because, the replacement of the teeth brush with a sponge piece will be hardly accepted by the consumers, the applicator can be a head with hair of the teeth brush of single-use. In this case, a gel product is used.

**The advantages of this variant of invention:**

The risk of infection with microbe's existent on the brush used by someone else is eliminated.

Due to invention, the obligation of rinsing the mouth with water is eliminated after teeth cleansing.

The brush with hair, which scratches the gums, is eliminated.

It is possible also the use of liquid product for the cleansing teeth not only of the pasty product.

**Example I.1:** It is made a "blister pack" (fig 1) with 12 compartments. There are taken 12 head of hair of teeth brush provided with a head that can be coupled at a handle and are introduced in the 12 cells of blister. Over these, heads of brush is poured (before gelatin) a gel for cleansing tooth. In a dis-

ting cell of the blister, a handle is introduced. The blister is close by sticking a foil. A "blister pack" with components of single use for tooth hygiene is obtained.

**Example I.2:** It is made a "blister pack" (fig 1) with 13 compartments like in example 1, with the difference that the piece of sponge has a symmetry of rotation and are introduced into the cells. It is taken a handle that at one head can be coupled with the piece of sponge and at the other head can be coupled with the tooth cleansing electric apparatus and it is introduced in the 13-th cell. Over the sponge pieces (2a) it is poured a liquid heaving the required qualities for cleansing tooth. The cells are close by sticking a foil. A "blister pack" with components of single use (for electric apparatus) for tooth hygiene is obtained.

## **II. Kit "blister pack" for single-use, with applicator and application product, for hygiene, medical use, or maintenance.**

### **Variant for medical use**

**Short presentation:** This variant of the invention takes into consideration the skin treatment, human or animal cavities, lesions in human surgery and plants treatment. The invention proposes blotters, brushes, bandages, etc. antiseptic packed with medical products in a "blister pack" system.

**The level of technique:** There are known and used in medical practice as single use products, like sterile bandages which are pieces of sterile bandages, packed in a tight bag. There are also known the auto-adhesive bandages moistened with disinfect product to put on wounds.

To deposit the liquid products there are used sterile bandages moistened on place with the respective product and, with the help of pincers, the product is applied on the desired place.

It is not known a "blister pack" with single-use components containing both the applicator and the product of application for medical use.

**The problem solved by this variant of invention:** The present invention offers a sterile product to be used in medical practice which contains both the pharmacy product and the tool of application of single-use packed in a "blister pack".

**Advantages:** The product according to this variant replace a series of sterile bandages, cotton wad dosing apparatus, shaving-brush, little bottles with medicine and pincers etc. used currently in the process of application in medicine. In addition, it eliminates the risk of alteration of a medical product kept in a large pack, after unsealing. The applicator will always have the best shape according to its destination.

**Detailed description:** The product according to the invention is a "blister pack" with components of single-use according to the general description of the invention, but has some special characteristics: The applicator can be made of sponge, of sterile bandages, or of cotton covered in sterile bandages. When it is made of textile materials and sponge, it has a lateral size small enough to be gripped by pincers. This applicator can be a sponge made piece, covered in bandages or can be only a fold bandage. In this case, the gripping of the applicator will be possible with pincers packed in the same "blister pack" (fig 4)

The applicator product (3) can be liquid or semisolid lubricant, natural or of synthesis having therapeutically qualities

The sterile pincers (4c), handle of special shape, (4d), or plastic handle (4b), can be packed in equal or smaller number with the applicators.

**Examples II.1:** The example from the general description is repeated, with a difference. It is poured after the introduction of the applicator (2) in cells (1a), a medical product currently prescribed by doctors for the treatment of medical affections of oral-cavity or of teeth (for example: borate glycerin). In the set of cells is also introduced a handle (4b) for coupling with the applicator (2b) in a special place space thermoformed (1e). A "blister pack" is obtained for oral affection treatment.

**Example II.2:** The example II.1. Is repeated with the difference that after introducing the applicator in the cells, a liquid pharmaceutical for the treatment of plants is poured (for example  $\text{CuSO}_4$  solution) A "blister pack" is obtained for medical treatment of the plants.

**Example II.3:** The example II.1 is repeated with the difference that after the introduction of the applicator in cells, a pharmaceutical liquid product for the treatment of wounds in dogs' ears, is poured over it. A "blister pack" is detained for the treatment of the affections of the exterior ear of the dogs.

**Example II.4:** Many pillows are made to be (2c) of sponge covered in sterile bandages (20 mm x 20 mm and 5mm maximum thickness sized). These little pillows are introduced in parallelepiped cells of PVC thermoformed 20mm deep, 20mm length, and 5mm width.

After introducing the applicator (1a) into the cells, iodine is poured over it, for the disinfecting of lesions in surgery.

Plastic pincers (4c) are introduced into the set of cell (1e). In use, the pillow impregnated with iodine is gripped with the pincer, and the border of the wound is waded. We obtain thus a "blister pack" for disinfecting in medical surgery.

### **III. Kit "blister pack" for single-use, with applicator and application product, for hygiene, medical use, or maintenance.**

#### **Variant for local hygiene: (human, animals, or plants).**

**Short presentation:** This variant of the invention presents a product used for skin, human or animal cavities hygiene. It is also use for the cleaning of near by bandaged zones in human or animal surgery, as well as at aerial parts of the plants cleansing.

**Level of technique:** They are known and used in practice, in the local cleansing process, bandages gripped by pincers and moisture in the cleansing liquid product. There are no known solutions referring to blisters with single-use products, containing cleaning product together with the applicator.

**The problem solved:** The product, according the invention offers, for the first time, to the consumers, a sterile product. This contains both the special liquid products for local cleansing, and the tool of a single-use application, in a "blister pack" easily to use and keep. In medical practice, the product according to the invention solve the local hygiene problem of ill people who can't have a bath, because of the uncured wounds and especially the problem of cleansing zone near the bandages or wounds. The cleansing products in these cases cannot be any detergents with water, but only certain products recommended by the doctors.

**Advantages:** According to the invention, complete the offer of local techniques, especially in medical practice and of domestic use, for domestic animal and plants. In the case of animal hygiene, (for example, the ear cleansing of domestic dogs and cats, the udder of milk animal), it is recommended to not be made with any kind of cleansing solution, but with certain suitable products. The present invention presents the best pair product-applicator.

In the case of leaves and stem plants cleansing, the ornamental plants having flea or other deposits, is recommended special substances and the use of a fine rubbing technique, conditions fulfilled by the product.

**Detailed description:** The product according to variant III of the invention provides many different utilities.

Consequently, there are many peculiar differences for every case comparing to the general description of the invention.

-The applicator is made of sponge, of sterile bandages or of other absorbent textile material. The applicators made of textile material are not provided with a coupling orifice with the handle, but have a lateral size small enough to be gripped with the pincers (4c). The textile applicator presents another possibility of gripping for use (for example their introduction on hand (2d) or on the finger customer's (2e)). Consequently, in this case both the shape and the size of the applicator can be very different. The cell (1a) in which this applicator enters will have the shape and the volume suitable to the applicator and field of use. For example, for corporal hygiene of immobilized people the volume of the applicator and the quantity of product (3) will be greater. In the case of the products used to the cleans-



ing of little animal's ears, the quantity of product will be smaller than that necessary to the complete impregnation of the applicator.

-The liquid product of application (3) has cleansing proprieties with specific composition to every case of use apart. For example, composition with shampoo, medicinal tea, alcoholic solutions, distillate water, physiologic serum or other products that specialists prescribe for this aim.

-The pincers (4c) or handle (4b) of plastic can miss or can be replace with other handles (4d) which what the applicator can be gripped and handed.

**Example III.1:** Fourteen gloves, of adult's hand and shape size (2d) are made of gauze or rough flax texture. These gloves are packed by rolling, leaving the aperture to the exterior. By thermoforming a set of 14 cells (fig 1) are made, suitable shape and size so that the gloves rolled as above, can be introduced in the cells. After introducing the gloves into the cells, a diluted solution of shampoo, without taste or smell, is poured upon them. The cells are closed by sticking a covering foil thus obtaining a product according to the invention meant to assure the hygiene of the udder of the cows, sheep etc, before milking.

The product will due for an animal during a week, twice a day.

*Way of use:* The milkman splits the foil from a cell (1a), takes off the glove (2d) from inside, puts it on the hand, and clean the animal's udder. Then, he takes off the glove (2d) from his hand and introduces it with the other side of the hand into the palm, after what begins again the cleansing of the udder. At the finish, puts the glove used (2d) in cell (1a) empty, detached this cell (1g) and can throw it out.

**Example III.2:** Six bags of towel tissue are made of an adult hand shape and size. The bags are packed by rolling, leaving outside the opened extremity. A set of six cells (1a) are made by thermoforming having shape and size suitable for the bags to income rolled as above.

After introducing the bags into the cells, a diluted solution of shampoo and ethanol, intensively perfumed, is poured upon them. The cells are close by sticking a covering foil (1c). Thus is obtained a product according to the invention destined to human hygiene for persons, who, from of many reasons, cannot have a general bath.

*The way of utilization is simple:* The customer unfastens the foil from the cell (1a). Takes off the bag from inside, introduces it on the hand and cleans the surface of his body. At the end, he puts the bag used in the empty cell, detaches this cell, and can throw it out. The cleaned surface is wiped with a towel.

**Example III.3:** The first example is repeated from the general description with the explanation that, after the introduction of the applicator in cells, a solution of 1-percentage alcohol in distilled water is poured upon these. In the set of cells (fig 1) a handle is also introduced into a specially place thermoformed (1e) for manual use, for coupling, with the sponge applicator. A single-use "blister pack" for the cleansing of the lives of the ornamental plant is obtained.

**Example III.4:** The example III.3 is repeated, with the following difference:

After the introduction of the applicator into the cells, one feeble solution of shampoo in distilled water, in a smaller quantity that the quantity that the sponge can absorb is introduced. The product obtain is a kit with single-use utility for the cleansing of the inside of dog's ear or cat's ears.

#### **IV. Kit "blister pack" for single-use, with applicator and application product, for hygiene, medical use, or maintenance.**

##### **The maintenance of clothes, footwear, furniture, and sanitary objects variant**

**Short presentation:** This variant of the invention presents a "blister pack" which contains applicators of single-use and products used for greasing or cleansing of different objects of personal or domestic use.

**Level of technique:** They are known and used in practice in the maintenance of footwear: A liquid cream with self-polish is packed in bottle provided with applicator with sponge, with what the shoe

cream is setting down on shoe. An emulsion of silicon oil is impregnated in sponge pieces, in the size of a hand and it is packed in a plastic box. Spots cleansing products on textile materials are presented in simple bottles.

The patent US 5765407 proposes a portable kit for spots cleansing on cloth s but not in blister. The product for cleansing and furniture polishing is exhibited in bottles provided with a wad of application or sprays.

For the sanitary objects hygiene for example W C bowl there are not products with cleansing tool of single-use, although, in this case, the keeping of cleansing tools after use is completely undesired.

**The problem solved:** The product according to this invention offers for the first time to the customer a kit that contains both the product of application and the tool of application of single-use in a compact "blister pack"

The invention proposes a blister containing footwear cream together with the applicator.

A blister pack is also, proposed for furniture maintenance of varnished wood containing the applicator and wiping, and waxed product of the surface.

Another product according to the invention contains a textile applicator and a cleansing product of spots from the textile products. Another variant of the product according to the invention contains applicators of single-use and a treatment fungicidal solution for the surfaces constructions fitted by mould.

All these variants of the product according to the invention are realizable according to the general description having as execution details, data, concerning the applicator shape and the material type, nature and the consistency of the product of application.

*Advantages of this variant:* The product according to the invention replaces a varied number of tools of application and pots containing products frequently used in hygiene and general maintenance process.

Besides, the products according to invention realize a new general conception about the means used indifferent field of hygiene and general maintenance. The multiple risks to mistake one for other product are eliminated. The product and the tools, with different destination, can be mistaken not.

**Detailed description of this variant of invention:** The product according to the invention differs by the field of the use and by the applicators and the products that are used, from any others product above described.

The size of the applicator (2) differs, depending to its destination, from 10 mm (in the case of applicators of shoe cream or spots cleansing) at 100 mm (in the case of the product destined to W C cleansing).

The material from witch the applicator is made, must resist to degradation That is why in the case of cleansing products of spots of maintenance of the furniture, material it is recommended to be a textile one. The product of application (3) is liquid or semisolid having qualities imposed by the field of application.

The great variety of cleansing or maintenance products, which can be included in the composition of the product according to the invention, does not allow a detailed description of them.

The plastic handle is provided with the system of coupling at the applicator, and has various shapes and sizes (fig. 4) depending of destination.

**Example IV.1:** It is made a Kit as in the example 1 from the general description with the mention that after the introduction of the applicator (2b) into the cells (1a) 5 ml of self shine shoes cream are poured upon them. In the set of cells, (1a) is also introduced, in a special thermoformed place, a little handle for manual utilization (4b). Thus, it is obtained a Kit with single-use components for the maintenance of leather footwear.

**Example IV.2:** The example IV-1 is repeated with the difference that after the introduction of the applicator (2b) in the cells (1a) it is poured upon it a liquid product (3) for chemical cleansing of spots on clothes. It is obtained a Kit with single-use components for the cleansing on clothes.

**Example IV.3:** The example IV-1 is repeated with the difference that, after the introduction of the applicator in the cells, a fungicidal solution, for to eliminate the mould from the walls is poured.

**Example IV.4:** Six cylindrical bags are made (2c) of textile material, or of insoluble material (20mm diameter and 40mm length), and are filled with residual textile or insoluble paper, but biodegradable. After what they are closed at the extremities. A blister pack (fig1) is made by thermoforming of six cells.

The bags are introduced in the cells (1a) and it is poured (3) upon them a blend of water, chlorine, and perfume. A plastic piece is introduced in a special thermoforming compartment, which has at his extremity; three peaks as if a trident (4d) provided with little peaks as the fishing needle.

The blister pack is close with a covering, adhesive foil (1c)

A kit with components with single-use is thus obtained for W C cleansing.

*Way of use:* The opening foil is unglued from the handle cell (1e), and from a bag cell (1a). The trident (4d) is stuck into the impregnated bag (2c, 3c), and the rubbing of the inside inner part of the bowl of W C. may begin. After finishing, the bag is pulled from the trident and it is throw away. The trident (4d) is placed in its place (1e) in the Kit.

**Description of drawings (pg. 2)**

**Fig. 1 is a plan view of a blister pack, with its components:**

- 1a* cell (compartment, blister) for applicator and product of application;
- 1b* edge of the cell rim.
- 1c*-covering foil to close the cell glued on the edge of rim of the cell separated for every cell
- 1d*-corner unglued of covering foil – *1c*.
- 1e* special cell for handle or pincers
- 4*-little tail, handle or pincers;
- 5* Coupling orifice of the applicator with the handle by hand or finger;
- 3*-product of application penetrating into the applicator and between the walls of the cell and the applicator
- 2*-Applicator shaped of the cell.

**Fig. 2 is a plan view of a single cell detached containing the product of application and the applicator.**

- 1a* - cell;
- 1b* - edge of the cell rim;
- 2* - applicator
- 3* - product of application;
- 5*-coupling orifice of the applicator at handle

**Fig. 3 is a plan view or a side view, of many types of applicator.**

- 2a*-applicator with cylindrical symmetry meant to the use with circular apparatus (side view)
- 2b*-sponge applicator flat shaped
- 2c* - applicator shaped as pillow or wad;
- 2d*-applicator glove shaped
- 2e*-applicator for finger

**Fig. 4 is the view of many handles for jointing or handing the applicator**

- 4a*- handle of square profile for use by rotation
- 4b*- handle coupled by pushing in the empty place of the applicator
- 4c*- pincer for wad or pillow applicators;
- 4d*- handle trident shaped for applicators of indefinite shape.

**Fig. 5 is an ellipsoid with three different axis It is useful for the understanding of a semi-ellipsoidal sponge.**

- 5a*-small axis
- 5b*- middle axis
- 5c* -big axis

## Bibliography

- US patent No. 5213428 / 25 05 1993  
US patent No. 4251897 / 24 02 1981  
EP patent No. 0872195 / 21 10 1998  
US patent No. 3939522 / 24 02 1976  
US patent No. 5911319 / 15 06 1999  
US patent No. 5875516 / 02 03 1999  
US patent No. 6004059 / 21 12 1999  
US patent No. 5599126 / 04 02 1997  
US patent No. 5836030  
US patent No. 5888010  
US patent No. 4048690  
US patent No. 4128911  
US patent No. 4346493  
FR patent No. 2750023  
FR patent No. 2772568  
FR patent No. 2691341  
WORD patent No. 9947021  
WORD patent No. 9933374  
WORD patent No. 9724048  
WORD patent No. 9725899 / 24 07 1997  
WORD patent No. 9944466  
EP patent No. 0925740  
EP patent No. 0955832  
EP patent No. 0885573  
EP patent No. 0393772 / 24 10 1990  
EP patent No. 0885573  
DE patent No. 3410539 / 03 10 1985  
DE patent No. 3337054  
DE patent No. 3104862  
DE patent No. 3429655  
DE patent No. 4218704  
DE patent No. 3406112  
EP patent No. 0080943  
EP patent No. 0878018 / 11 06 1997  
DE patent No. 4243094 / 17 02 1994  
US patent No. 5624036 / 29 04 1997  
DE patent No. 4429503 / 22 02 1996  
FR patent No. 2721498 / 29 12 1995  
JP patent No. 10137321 / 26 05 1998  
FR patent No. 2760226 / 04 09 1998  
US patent no. 5909739 / 08 06.1999.  
US patent No 5774925 / 07 07 1998  
US patent No. 4628564 / 16 12 1986.  
US patent No. 4335731 / 22 06 1982  
US patent No. 5909739 / 08 06. 1999  
US patent No. 5865195 / 02 02 1999  
US patent No. 5893378 din 13,04,1999  
FR patent No. 2769810  
US patent No. 3822432  
US patent No 3707013  
US patent No.5181531  
US patent No. 5163561  
US patent No. 5044035  
FR patent No. 2772571  
FR patent No. 2748914 / 28 11 1997  
Word patent No. 9749315  
WORD patent No. 9907253  
WORD patent No. 9725900  
WORD patent No 8804530 / 30 06 1988  
WORD patent No. 9820774  
CN patent No. 1222836  
EP patent No. 0917838 / 26 05 1999  
EP patent No. 0954231  
EP patent No. 0925740  
EP patent No. 0955833  
FR patent No. 2780254 / 31 12 1999  
DE patent No. 4238421 / 19 05 1994  
JP patent No. 3261469  
WORD patent No. 9510243  
WORD patent No. 9003162  
WORD patent No.8202481  
DE patent No. 19708875  
WORD patent 9513001  
GB patent No. 2146220 din 17 04 1985  
US patent No. 5542236 din 06 08 1996  
EP patent No. 0642988 din 15 03 1995  
WORD patent 9954209 din 28 10 1999  
US patent No. 5753246 din 19 05 1998  
DE patent No 3441594 din 22 05 1986

## Claims:

1. Kit "blister pack" of single-use with applicator and product of application, for hygiene, medical use or maintenance, compound of several inner cavities formed between one inferior concave(1) side named cell(1) and one upper side that consist in a covering plane foil that close the said cell(6) wherein:

Each cell (1) is tight closed being sterile and hygienic.

The closing of the said cell is realized by gluing or by thermal welding of the upper covering foil (6) upon the edge of the opening rim (1a).

The said covering foil is interrupted (7) along the separation lines between the cells and it has an unglued corner (6a) for to be easily detached by pulling.

Part of the blister contains cells (1) that hold inside a pair consisting in an applicator (2) and a product of application (3).

The other part of the blister contains a single cell (1b), that hold inside a small handle (4a, 4b) or a pincer (4c) or any kind of a handle (4d).

Said applicator (2) made from an absorbent material, that is capable to retain and to release if pushed the retained product (product of application 3) and it is for a single use only.

Said product of application (3) is a liquid, a gel, or a paste

2. Kit "blister pack" of single-use with applicator and product of application, for hygiene, medical use or maintenance. The product according the invention is compound of a several inner cavities formed between one inferior concave (1) side named cell (1) and one upper side that consist in a covering plane foil that close the said cell (6) wherein:

Each cell (1) is tight closed being sterile and hygienic.

The closing of the said cell is realized by gluing or by thermal welding of the upper covering foil (6) upon the edge of the opening mil (1a).

The said covering foil is interrupted (7) along the separation lines between the cells and it has an unglued corner (6a) for to be easily detached by pulling.

The blister contains cells (1) that hold inside a pair consisting in an applicator (2) and a product of application (3).

Said applicator (2) made from an absorbent material capable to retain and to release if pushed the retained product (product of application 3) and it is for a single use only.

Said product of application (3) is a liquid, a gel, or a paste.

3. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be used in medical, sanitary, veterinary, plant-sanitary fields, and in hygienic and maintenance fields.

4. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in human medicine field.

5. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be use in veterinary, field.

6. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in plant-sanitary field.

7. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in human corporal hygiene.

8. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in the application of cosmetic products.

9. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in animal or plant hygiene.

10. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in maintenance of any object of personal use.

11. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 destined to be use in maintenance of furniture, of sanitary objects or of electric-apparatus.

12. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be use against parasites, and insects, as well as in disinfecting.

13. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 to 12, wherein at least the following industrial operations can be obtained by an industrial method:

The thermoforming of the cells

The forming of the applicators from polyurethane foam

The inserting of the applicator in cells

The inserting upon the applicator of the product of application

The thermal welding or gluing of the covering foil

14. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 13 wherein the inserting of the product of application upon the applicator includes the following steps:

The applicator that lies in the cell is pressed until the entire air quantity from it is inside is eliminated.

Depressing of the applicator begins after it has been inundated with the product of application.

15. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 13 wherein :

The covering foil is glued on the edge of the cells rim, it is cut along the separation line of the cells and the edge of rim is being perforated or partially cut along the same line.

16. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be use at washing and cleaning of the milk animal udder.

The said applicator is in the shape of a glove or of a bag and it is made of sponge, of a textile material.

The said glove or said bag it is packed by rolling starting from the closed end to the open end and it is inserted into the cell.

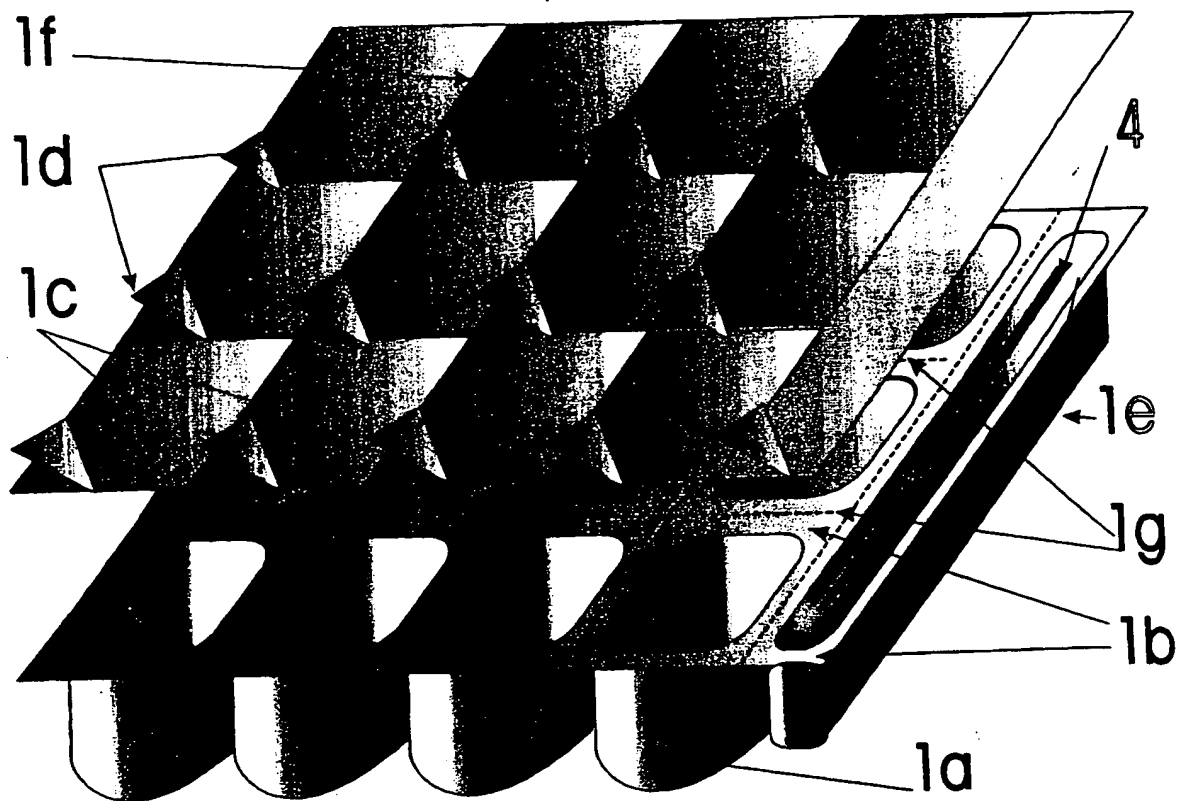
17. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be used for local cleaning and washing of human body.

18. Kit "blister pack" of single-use with applicator and product of application, as claimed in claim 1 is destined to be used for washing sanitary objects and in particular the toilet bowl.

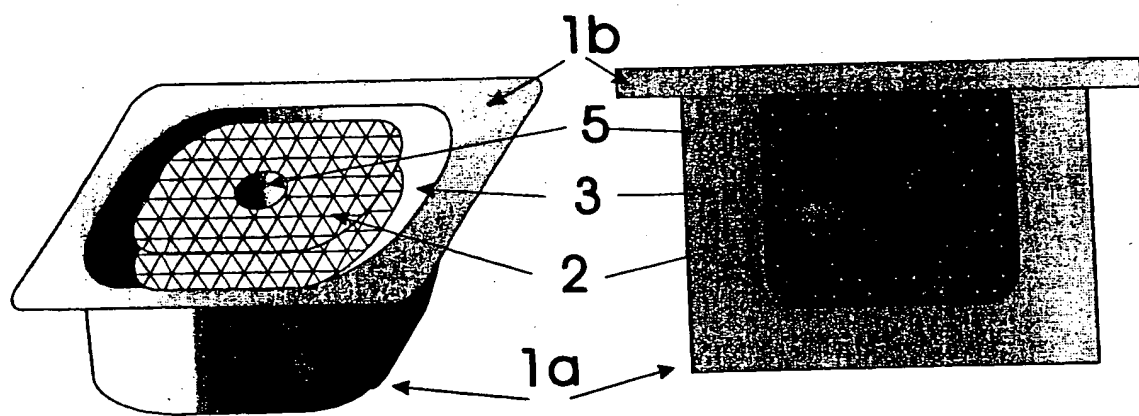
The applicator is in the shape of a bag and it is made of textile materials and it is fill with absorbent textile product or paper and after that it is closed at it's opening end.

The handle inserted in the blister pack cell have two or more teeth endowed with backward hooks like those used by the fisherman.

1/2

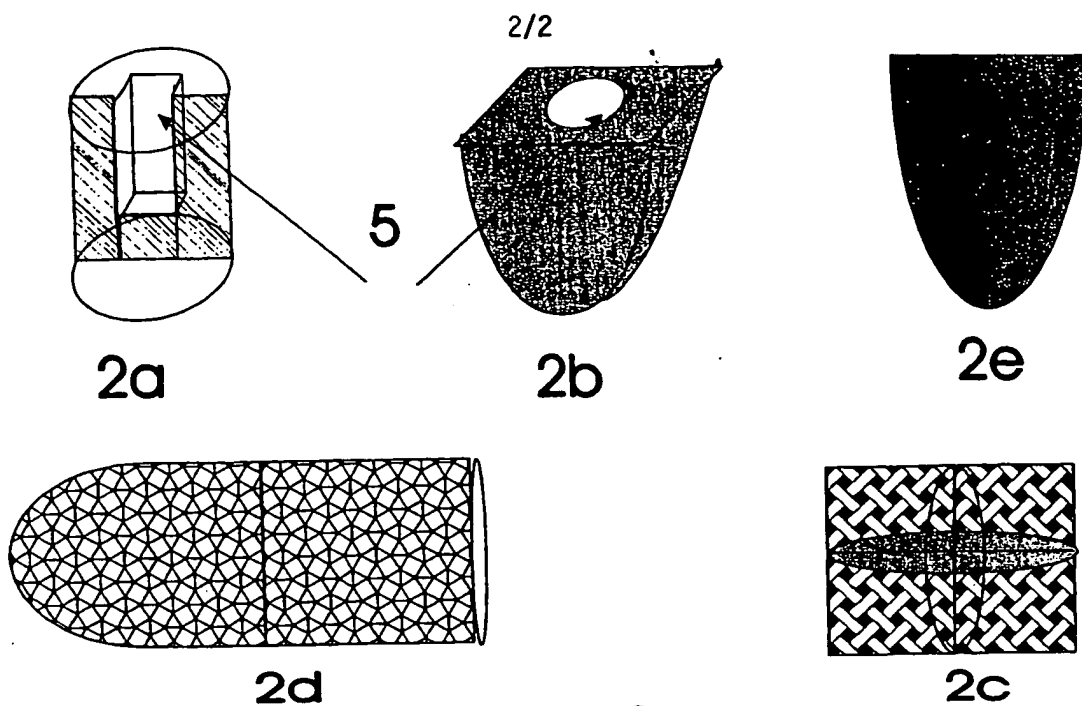


Figur 1

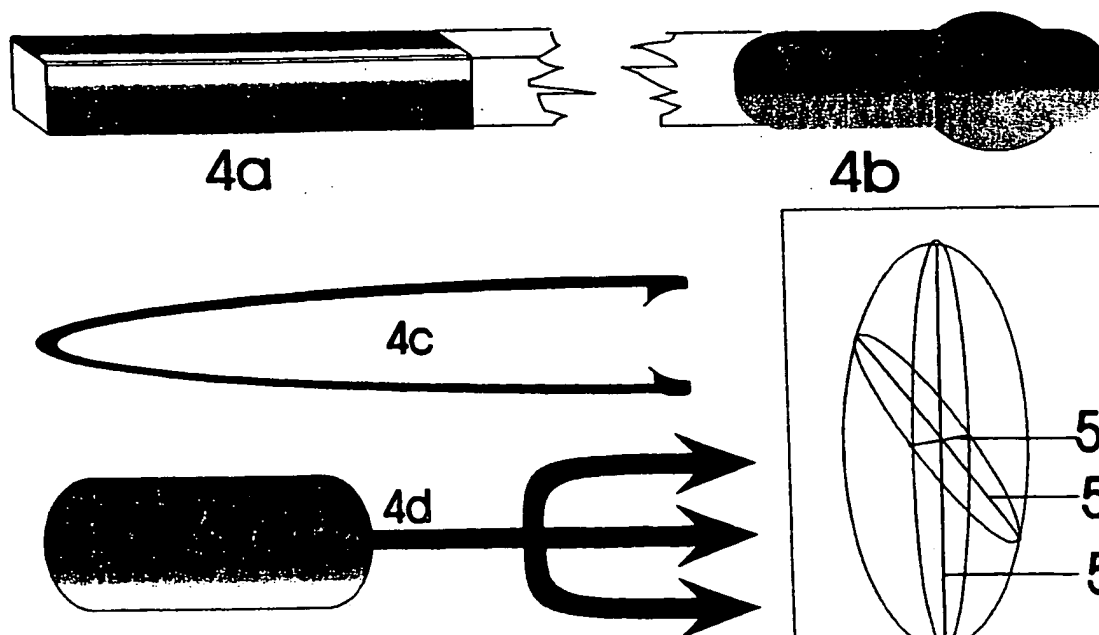


Figur 2

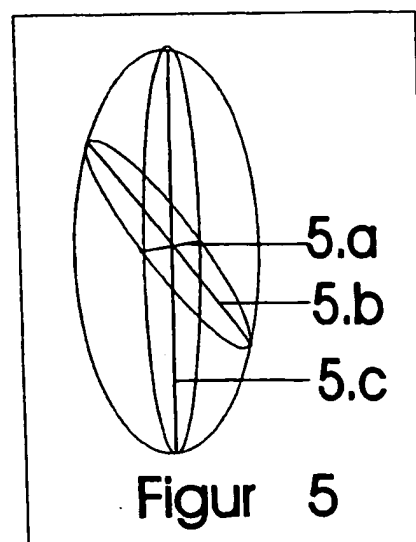




Figur 3



Figur 4



Figur 5

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/RO 00/00024

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B65D75/34 B65D75/36 B65D77/24

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3 976 195 A (COHEN SHELDON S) 24 August 1976 (1976-08-24) abstract; figures	1
A	US 4 691 820 A (MARTINEZ ROBERT) 8 September 1987 (1987-09-08) column 2, line 40 - line 65; figures	1
A	US 5 911 319 A (STOLTZFUS JOHN ET AL) 15 June 1999 (1999-06-15) cited in the application abstract; figures 7-11	1
P, A	WO 00 34145 A (LOHMANN THERAPIE SYST LTS ; FUCHS MICHAEL (DE); SIMON GUENTER (DE);) 15 June 2000 (2000-06-15)	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

16 March 2001

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/RO 00/00024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 3976195 A	24-08-1976	AU 500489 B	24-05-1979
		AU 8019475 A	21-10-1976
		CA 1032904 A	13-06-1978
		DE 2516766 A	30-10-1975
		DK 165475 A	19-10-1975
		FR 2267753 A	14-11-1975
		GB 1498137 A	18-01-1978
		JP 50149175 A	29-11-1975
		NL 7504484 A	21-10-1975
		SE 7504447 A	20-10-1975
		ES 436725 A	01-05-1977
<hr/>			
US 4691820 A	08-09-1987	AT 89523 T	15-06-1993
		AU 587875 B	31-08-1989
		AU 6536786 A	21-05-1987
		BR 8605676 A	18-08-1987
		CA 1276597 A	20-11-1990
		DE 3688453 A	24-06-1993
		DE 3688453 T	28-10-1993
		DK 548886 A,B,	19-05-1987
		EP 0223581 A	27-05-1987
		JP 2030721 C	19-03-1996
		JP 7064365 B	12-07-1995
		JP 62122969 A	04-06-1987
		NO 864567 A,B,	19-05-1987
<hr/>			
US 5911319 A	15-06-1999	US 5794774 A	18-08-1998
<hr/>			
WO 0034145 A	15-06-2000	DE 19856845 A	15-06-2000
		DE 19909225 A	07-09-2000
		AU 1555500 A	26-06-2000
<hr/>			

